

# PATENT ABSTRACTS OF JAPAN

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(71)Applicant : DAINIPPON PRINTING CO LTD

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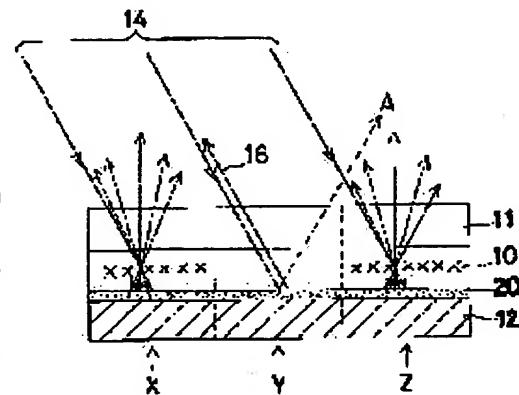
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## (54) REFLECTION TYPE POLYMER-DISPersed LIQUID CRYSTAL DISPLAY DEVICE

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To obtain a reflection type polymer-dispersed liq. crystal display device bright, broad in visual field, and excellent in visibility by providing a retroreflection layer on the side opposite to the observation side of a polymer-dispersed liq. crystal layer.

**SOLUTION:** A polymer-dispersed liq. crystal(PD) 10 is interposed between a transparent substrate 11 and a substrate 12, and a retroreflection layer 20 is arranged in place of a conventional mirror on a surface of substrate 12 on the side opposite to the observation side of PD liq. crystal 10. Here, the retroreflection layer 20 has a characteristic of making incident light reflect to direction nearly opposite to the direction (making retroreflect) and the characteristic does not depend on the direction of the incident light. A paint contg. large number of transparent fine beads and a film contg. large numbers of transparent fine beads have a characteristic of the retroreflection. Light illuminating pixel in a transparent state is reflected in the normal reflecting direction to enter the eye, and the pixel to be seen does not become dark. This phenomenon rather prevents a problem to cause the extreme deterioration of visibility by the black and white reversal.



### LEGAL STATUS

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(P2000-1949)

168 球奇の詩集

下、P D 液晶と呼ぶ。) 10 は透明基板 11 と基板 12 の間に保持され、P D 液晶 10 の観察側と反対側の基板 12 表面には、ミラー 13 が配置されている。そして、この反対側 P D 液晶表示装置は代表的に 3 つの画面 X、Y、Z からなるものとする。いま、画面 X、Z は電圧が

| 機器記号    | P1      | フロント(参考)  |
|---------|---------|-----------|
| G 0 2 F | G 0 2 F | 2 H 0 4 2 |
| G 0 2 B | G 0 2 B | 2 H 0 8 9 |
| 5/128   | 5/128   | 2 H 0 9 1 |
| G 0 2 F | G 0 2 F | 5 0 6     |
| 1/1335  | 5 2 0   | 5 2 0     |
|         |         |           |

|          |             |        |                        |
|----------|-------------|--------|------------------------|
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 Fターミナル参考書 2202 E04 E08 E15  
 21058 HAL5 Q05 TA12 TA17

554) [専門の名稱] 反射型高分子分離型標準表示装置  
 555) [専門の名稱] 反射型高分子分離型標準表示装置  
 556) [要約] **【課題】** 明るく、広視野で、相移性の良い反射型高分子分離型標準表示装置。  
**【解決手段】** 高分子分離型液晶層 1.0 の顕微鏡とは反対側に再反射型層 2.0 を設けて、透明状態にある画素 Y からその反反射方向に位置する観察者の目に反射光が見え、その画素 Y が黒く見えず白黒反転してしまう現象

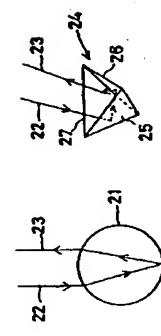
The diagram shows a vertical cross-section of a soil profile. At the top, there is a thin layer with a wavy pattern and a downward-pointing arrow labeled '2'. Below this is a layer with a diagonal hatching pattern and two downward-pointing arrows labeled '2'. The next layer is solid black with a downward-pointing arrow labeled '2'. This is followed by a layer with a diagonal hatching pattern and two downward-pointing arrows labeled '2'. The bottom layer is solid black with a downward-pointing arrow labeled '2'. There are also some small 'x' marks scattered within the layers.

されている。PD液晶装置では、その原理から電光波を用いる必要がなく、電場を加えるか加えないかに応じて、液晶が透明状態、散乱状態に変化するため、非常に用いるく、例えば裏面に鏡面部材を配することにより、階ベーバーホワイト表示が可能である。



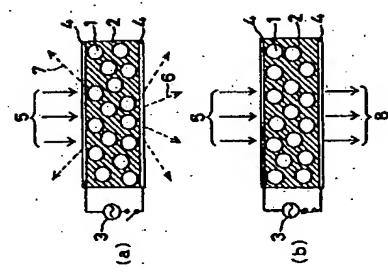
(5)

[図3]

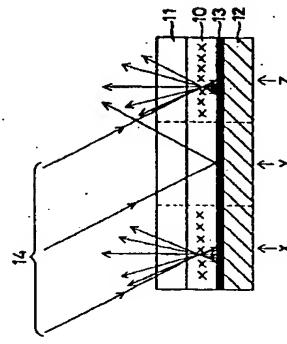


(a) (b)

[図4]



[図5]



[図6]

